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POVERTY REDUCTION AND LIVELIHOOD IMPROVEMENT OF WOMEN THROUGH GOAT REARING

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ABSTRACT

This study aimed to examine household in goat keeping farms having more than two goats with respect to its viability, socioeconomic characteristics of the women goat keepers, contribution of small scale goat farming to food security and livelihood, identify major problems associated with small scale goat famers. The study had been conducted in 6 villages namely Kandhapara, Hossainpur, Merigai, Horinadi Shimulia and Nagua of Phulpur upazila in Mymensingh district. In total 60 farmers comprising 07 medium, 43 poor and 10 most vulnerable or extreme poor farmers were randomly for the study. Primary data were collected from the selected farmers by interview method. Both tabular and financial analyses were done to achieve the objectives. The study revealed that most of the women were poor with small family size. However they were young and literate. The study clearly indicated that investment in goat farming were viable. The annual total cost of production per Black Bengal goat was BDT. 3,374, while gross return and net return per household were BDT.21,276 and BDT.17,902 respectively. It was observed that livelihood increased dramatically through goat rearing in the study area. Annual food purchasing capacity increased from 20 to 28 percent. The social status of the farmer"s family increases. Educational status, festival, health facilities acceptance were increased at 19%, 26% and 28% through goat. The position in the family, participation in social activities, water facilities and sanitation also increased remarkably. The study also identified that the goat farmers had been facing some crucial problems with goat keeping. If these problems could be overcome, all the goat farms would be able to earn a higher level of that of the existing level. It was clearly found that the women who reared goat had the most rapid improvement in livelihood.

Keywords: *poverty reduction, livelihood improvement, women*

INTRODUCTION

Livestock is the most viable sector in the economy of Bangladesh. In the livestock sector, goats are very important species of livestock in Bangladesh, mainly on account of their short generation intervals, higher rates of prolificacy, high market value and ease with which the goats and their products can be marketed. Bangladesh is an agro-based developing country in the South Asian region. The economy of Bangladesh is predominantly poor and majority of the people (49.7 per cent) live below the poverty line and number of landless poor has recently been increased to 65.00 per cent. About 76.8 per cent of population lives in rural areas and their average per capita income is only US$ 848 (BBS, 2011). Goat is economically suited for the poor people. Goat requires less feed than cattle. They are usually maintained on tree leaves, shrubs and bushes in the rural condition. Because of their docile nature and small size they are easy to handle and are preferred by the rural women as a domestic animal to rear. About 36% of the total farm households of Bangladesh are involved in rearing goat under scavenging condition (BBS, 2007).

In Bangladesh the economic value of goat is accounted for its good quality, flavor of tender meat, prolificacy, and high fertility, early sexual maturity and good quality skin. Goats, now a days in Bangladesh are valued for their contribution in poverty reduction among the rural poor. The technology package, "Goat rearing model for landless and small farmers" developed by BLRI shows that the annual additional income of one female goat keeper is about Tk. 1455. A recent report of BLRI entitled "National program on poverty reduction through goat production" shows that it is possible to earn around Tk. 7,000-12,000 per year (from the second year) from goat farm starting with five does. Goat provides 23% milk and 27% meat production in the country amounting to 450 thousand metric tons of milk and 105 thousand metric tons of meat respectively. Mutton consumption in the urban areas has been increased to 23%. There are more than 56,000 goat and sheep farms operating in the country (DLS, 2016). NGO"s are also coming up to help farmers in establishing goat farms through supplying credit and providing necessary training in Bangladesh, Black Bengal goat occupies a very significant position as an animal resources in the predominantly agro based economy of the country. Moreover, the economy of Bangladesh is particularly of subsistence type. Goats are generally reared in traditional backyard allowing them to graze mainly in surrounding areas of the households. The higher demands for goat meat and specially for skin in the local as well as foreign markets has created the need for the development of goat enterprise particularly to the vulnerable group of people in the country.

Goat is an important species of livestock in the developing world. Goat is small and easier to maintain than cattle. Its prominence is associated with various contributory factors like (meat, milk, fiber and hide) production. Despite its immense contribution towards national economy, proper emphasis has not yet been given to goat farming in Bangladesh. Even the number of commercial goat farming is not increasing in rural and /or urban areas. However, its causes are not clearly known due to lack of proper research work. But goat has significant importance on livelihoods improvement. So, the present research has been conducted to find out the contribution of goat in changing livelihoods and improving food security of the goat keepers. The research work was carried out to achieve the following specific objectives-i) to identify the socioeconomic characteristics of the women goat keepers in the study area, ii).to estimate the contribution of small scale goat farming to food security and livelihood; and iii) to identify major problems associated with small scale goat farming.

RESEARCH METHOD

Survey Design

The main purpose of the survey was to collect and analyze field level data relating to costs and returns both in physical and monetary terms on the operation and maintenance of goats as well as on production of individual goat farm. These data were required to make future projections for the value of inflows and outflows over the life of the project and hence, assessed the profitability of goat keeping households. There are three main methods by which farm survey data can be gathered. These are: i) direct observation, ii) interviewing respondents, and iii) records kept by respondents.

Selection of the study area and period of investigation

In farm management study, selection of the study area is an important step. Accordingly to Yang (1962), "the area in which a farm business survey is to be conducted relies on the particular purpose of the survey and possible cooperation from the farmers and other respondents". To achieve the objectives of the present study, a preliminary survey was conducted to Hossainpur, Kandhapara and Merigai villages under Chondhara union and Shimulia Village under Balia union in Phulpur upazila. In these villages agriculture is the major occupation of most of the villagers and most of the women of these villages are involved with various co-operatives. The selected goat keepers were distributed in 6 villages of Phulpur Upazila in Mymensingh district. The formal survey, however, was conducted during the period from March to April, 2016.

Sampling Technique

In the present study the criterion for selecting a sample was that , individual household / farm must keep and maintain at least 2 adult goat(with kids) during a year. In other words, household having less than

2 adult goats was excluded from the study. A list of 100 goat farmers was prepared with the help of some experienced goat keepers of the study area, which constituted the population. Sixty farmers were randomly selected from the sampling frame list of goat farmers for the study. This means, a random sampling technique was followed to collect primary data.

Collection of data

Before finalization of data collection instruments necessary pre-testing was made and based on the result the instruments were modified and corrected. After the schedule was finalized, the selected farmers were individually interviewed. Having done the interview, each schedule was checked in order to be sure that the information of each of the items had properly been recorded. Items found contradictory and overlooked were corrected in the second visit.

Processing and validation data

All the collected data were scrutinized and then coded, summarized and processed for analysis. The first step was that the collected data were transferred to master sheets. These data were classified according to wealth ranking .Secondly; processed data were inserted in computer using the Microsoft (MS) excel.

Analytical technique

Data were analyzed with a view to achieving the objectives of the study. The filled up interview schedules were scrutinized and the collected data were processed. These data were classified in accordance with the set objectives. For this study, the following techniques were used- i) Tabular technique, ii) Project appraisal technique. It may be noted that only one year old female goat/doe and three months old castrated male goats were considered for goat keeping.

RESULTS AND DISCUSSION

Socioeconomic characteristics of the respondents

The socio-economic characteristics considered here are the family size and composition, educational level, land ownership and utilization pattern, and occupation. Socio-economic characteristics of the farmers are important factors influencing production planning and decision making.

Age distribution of the respondent including family members

The age groups of respondents and other family members were classified into seven categories in this study. These were indicates that 26.67 percent of the farm owners belonged to age of 30.01 to 35.00 years group was the highest number of goat farmers. About 1.67 percent fell into below 20 year"s age group, 8.33 percent fell into 20.01 to 25.00 years age group, 18.33 percent belonged to the age group of 25.00 to 30.00 years, 23.33 percent were in 35.01 to 40.00 years group, 8.33 percent belonged to the age group of 40.01 to 45.00 years and 13.33 percent were in above 45.01 years age of goat farmers. Family members (mainly unmarried sons and/or daughters of farmers) were in the age group below 20 year constituted a major part (50.60 percent) of the family member. It may be noted that 56.67 percent owners of goat farms were female. This information implied that a good number of female was involved in goat rearing in the study area.

Educational levels of farmers

Education plays an important role in agricultural development. Revealed that proportion of medium farmers was found to have 85.71 percent primary level education more than those of poor and most vulnerable farmers. Slightly above one-fourth (25.60 percent) of the poor farmer had secondary level education as against medium and most vulnerable farmers. About 14 per cent medium farmers had higher education.

Family size

In the study, a family has been defined as total number of persons living together and taking meals from the same kitchen under the administration of the same head of the family. It may be noted that the same classification of age group, as stated was also followed in this section. It appears from study 4.3 that average family size consists of 4.35 members. Thus, this average family size was relatively smaller than the national average of 4.6 member of Bangladesh (BBS, 2011).

Occupational status

In the study area about 81.67 per cent of the respondents were engaged in agriculture. Moreover, 3.33 per cent, 20.00 percent, 21.67 per cent, and 13.33 per cent of the respondents dealt with service, business, house wife, and rickshaw pulling, respectively. It was however, true that many of these farmers did have second occupation.

Land distribution pattern of goat keeping farmers

It is evident that very little number of the farmers (10) was found to live with land area under fallow having 3.70 decimal. The average farm size was 76.32 decimal of the goat farmers. It implied that most of goat farmers were most vulnerable farmers (07) having land size below 10 decimal, while poor farmers (43) possessed their land size from 11 to 50 decimal and medium farmers(10) had land size from 51 to 130 decimal.

Cost, return, profitability, food security and livelihood of goat farmers

The main purpose of this section is to estimate the annual cost and return of the goat farms. The cost and benefit streams are the core of the study, since these are directly be used in appraisal calculations of goat farms.

Investment cost

Investment costs of the selected goat farmers includes purchase of goat, housing, tools and equipment. The investment costs of the selected farms are shown in Table 1. It observed that initial investment costs were pretty high for each farmer in first year, which were BDT. 6, 467 for first investment cost and lastly BDT. 142.00 for tools and equipment cost for the third year.

Purchasing cost of goats

It was observed that most of farmers started with a minimum number of 2 goats and maximum 3 goats comprising one year old female goat. The purchasing price of an individual female goat was BDT.1740.00 and that of a male goat was BDT. 2250.00 only. The initial capital cost of purchase was determined by multiplying total number of goats of farmers with it‟s per unit price (i.e. BDT. 17400.00 and BDT. 2250.00 respectively). The average purchase cost of goat of the farmers was found BDT. 5220.00

Production cost

Cost of production associated with goat farm was calculated by taking into consideration of human labour cost, feed cost, castration cost, medicare cost and other costs, Production cost was relatively higher at the beginning of farm. It is presented in Table 1.

Benefit from goats

All newly born kids (whether male or female) of the selected goat farms were sold at the age of one year and these benefits were added to yearly income of the farms. In this study, only second year considered for estimating benefits from goats. So, only in second year's selling price of goat received by the farmers were taken into account (Table 2)

Table 1: Per farm investment, O& M and production cost of goat farmers

Cost item	Year-2013	Year-2014	Year-2015	Average (BDT.)
Investment cost of goat (BDT.)				
Purchasing cost	5220	0	0	1740.00
Housing cost	1067	0	0	355.66
Tools & equipment cost	180	0	142	107.00
Total	6467	0	142	2203.00
Operation & maintaining cost (BDT.)				
House repairing cost	00	300	300	200.00
Human labour cost	13800	13800	13800	13800.00
Total	13800	14100	14100	14000.00
Production cost (BDT.)		1650	1730	1476.76
Feed cost	1050	1650	1730	1476
Castration cost	45	90	90	75.00
Medicine cost	163	150	130	147.67
Total	1258	1890	1950	1699.43
Grand Total cost (BDT.)	21,525	15,990	16,192	17,902.43

Table 2. Farmers received benefit from goat farm

Item of benefit	Year-2013	Year-2014	Year-2015	Average (BDT.)
Goat sale	6520	23400	27400	19,106.67
Value of milk	1820	1820	1820	1820.00
Value of droppings	320	350	380	350.00
Gross Return	8,660	25,570	29,600	21,276.67

Net Income

Considering three years total income and expenditure the net income was BDT.3, 374.00 as shown in Table 3. It indicates that rearing of goat in the study area was profitable. The observation of net income of goat was higher than the findings of Haque (2011).

Thus, it could cautiously be concluded that goat herd having 3 goats could not bear the risk of 10 percent decrease in benefits. In other words, farms having 3 goats or above were profitable businesses for farmers. The profitability of these goat keeping projects might be expected to be sensitive to human labor cost, selling price of goats, feed cost, variation of production, etc. George and Shorey (1978) and Miah and Hardaker(1988) also argued that the problem of uncertainly was another crucial problem to which there was no clear solution. A great deal is inevitably depend upon the judgment of those making the decision, and no amount of clever statistical manipulation should conceal this fact. The aim of this section is to note what happens to profitability under the changed circumstances.

Table 3. Net incomes from goat for three year

Category	Frequency (BDTK.)
Total income	21,276.67
Total expenditure	17,902.43
Net income	3,374.24

Impact on goat farms on annual income

Income sources were not the same for all the selected farmers, there were multi-sources to generate income. Moreover, no written record was maintained as far as sources of income were concerned. Under the circumstances, the author had to apply his value judgment to estimate the annual income of individual goat farmers on the basis of some common sources of income. In this study income sources were classified into four major categories, which were farm income (except goat), non-farm income, others, income from goat farming and others. It was observed that contribution of farm income was the highest to their annual gross income for all the farmers under study followed by income from non- farm sector income from goat rearing and others respectively. Most of the farmers were involved in agriculture, agriculture labor, rickshaw pulling, businesses, small trading and petty business. In the study area many women were involved in vegetables and paddy production. They had an important role to the family's annual income. About 26.35 per cent of the total annual income was contributed from the non-farm sources. Annual income statistics in the study area found similarity with the findings of Akter (2004).

Contribution of goat keeping on employment

Economic development of a country is to increase the well-being and quality of life of all the people through the rapid economic growth with social justice. Rural people in Bangladesh are closely involved in various agricultural activities. Women are nearly a half of the country's human resources but in most of the developing countries, one estimate suggests that women's labor accounts for 25 per cent of value addition in post-harvest processing of rice alone in addition to taking care of children, preparing and serving food for the members of the family, rural women are also involved in other important sub sectors like poultry, fishery (Scott and Carr, 1985). On an average women's productive hours of work in Bangladesh is between 10-14 hours a day compared to 9-11 hours for men (Farouk, 1980). Employment opportunities in these sub-sectors are increasing. In this portion, an attempt has been made to investigate the employment status of both male and female members. During the period of data collection, it was observed that like crop, a lot of women and children were engaged in overall management of goats.

Contribution of goat keeping in food security

In this section the contribution of goat keeping on household annual consumption expenditure was estimated. The increment cost of rice was the highest in large herd as these households had more members than medium and small herd household. Annual return from goat rearing was also higher for large herd than that of medium and small herd farmer because number of goat was higher. For small herd and medium herd farm, the percentage of contribution was 17.79 percent and 21.32 per cent. It was observed that the increase of herd size also increased a higher percentage of consumption which contributed by goat rearing.

Percentage change in festival purpose consumption was the highest (27.70 per cent), the second highest percentage change of using of medicine purpose (26.10 per cent) and lowest was vegetable consumption (13.11 per cent). In general, positive changes have been traced for all the different types of farmers in terms of consumption. The overall contribution was found to be positively related with the farm a size indicating that as size of farms increases the contribution of goat farming also increase related to Pawar and Thamber (1994) results. The spending capacity had been increased depending on farm size. In general, the overall spending capacity has gone up by 21.09 per cent to addition of goat enterprise.

Rural women regarding impact of IGAs on their livelihood

The women were asked to mention whether there had been any changed occurred of their lives due to performing IGAs over the last three years especially the contribution of goat keeping on livelihood of household members. Twelve items of livelihoods were selected as the major areas those were changed due to increase in income and opinion of rural women are summarized in Table 4. The majority of the rural women (60%) indicated that their livelihoods had been improved through participation in IGAs, indicating contribution of goat keeping on household. The position in the family, participation in social activities, water facilities and sanitation also increased remarkably.

Table 4. Overall impact of goat keeping on livelihoods of rural women

Statement	Opinion of Rural Women (%)		
	Improved	Same as before	Decreased
Household income	48	35	17
Position in the family	75	20	5
Dependency on husband	37	16	47
Housing condition	38	58	04
Health situation	35	56	09
Water facilities	78	22	00
Sanitation	69	31	00
Food availability	34	49	17
Participation in social activities	60	20	20
Freedom in cash expenditure	54	07	39
Family misery	49	37	14
Overall livelihoods	60	30	10

Many women (30%) reported that involvement with IGAs did not change their livelihood status and 10% mentioned that their livelihood status in fact decreased. Loss of property due to discontinuation of income projects, unstable market prices, defaulting and the burden of loans were major reasons for the negative effects reported by women. Income generation statistics in the study area found similarity with the findings of World Bank (2001).

Problems related to goat keeping

There are several constraints to increase livestock production business in Bangladesh. Risk and uncertainty are major common factors of livestock enterprise. Apart from these, goat keepers have been facing a number of serious problems. This chapter presents the major problems and constraints faced by the farmers in practicing goat keeping and the solutions to these problems, so that the farmers can obtain better economic return from goat keeping. The farmers were asked to report major problems they had been facing in goat farming. i) Lack of grazing land ii) Lack of improved breed of goat, iii) Lack of housing facilities, iv) Lack of credit, v) Inadequate veterinary services, vi) Lack of extension services, vii) Theft of Goat.

Suggested solutions

In order to overcome the problems of goat farming and making the goat farms more profitable, the goat farmers of the study area were asked to suggest some possible solutions to the problems. The farmers for overall development of goat farming put forward the following suggestions- i) Prevention of diseases, ii) Ensuring proper veterinary services, iii) Development of milk marketing facilities , iv) Leasing of government khas land for goat rearing, v) Availability of cross-breed goats, vi) Provide extension service, vii) Credit facility with low interest In order to the problem of shortage of fund, the provision for short term loan for goat rearing should be made on easy terms and conditions. In the study area, it was observed that many farmers were interested to expand their goat production, but most of them were suffering from the shortage of adequate capital supply. It was also evident from that fifty three per cent of farmers showed interest to get supply of institutional credit at low interest rates.

CONCLUSION

The conclusions drawn on the basis of the findings achieved in the study are mentioned below: i) In respect of profitability, it can easily be concluded from the study that farmers having more goat can earn relatively more profit. Large proportion of female labor was engaged in the goat farming activities. ii) Goat farming contributed 20.56 percent to the gross annual income and the overall spending capacity has increased by 21.09 percent due to practice of goat farming. iii) Expansion of goat rearing could overcome the problems of low income and protein deficiency of the rural people.

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